

SIEMENS

SIMATIC HMI

HMI devices

TP700 Comfort Outdoor,
TP1500 Comfort Outdoor

Compact Operating Instructions

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Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
⚠ WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
⚠ CAUTION
indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Preface

Scope

These compact operating instructions apply to the following HMI devices in conjunction with the WinCC software package:

- TP700 Comfort Outdoor, article number 6AV2124-0GC13-0AX_
- TP1500 Comfort Outdoor, article number 6AV2124-0QC13-0AX_

"_" stands for the variant key of the article number.

These compact operating instructions describe the technical differences of the Outdoor devices to the corresponding standard devices.

The information in these compact operating instructions take precedence in terms of their binding character over the statements in the following underlying operating instructions, the release notes and the online help.

Operating instructions on the Comfort Panels

<http://support.automation.siemens.com/WW/view/en/49313233>

Note

This document belongs to the device and will also be required for repeat commissioning. Keep all supplied and supplementary documentation for the entire service life of the device.

Provide all associated documents to any future owner of the device.

Style conventions

Style Convention	Scope
"Add screen"	<ul style="list-style-type: none">• Terminology that appears in the user interface, for example, dialog names, tabs, buttons, menu commands• Required input, for example, limits, tag values.• Path information
"File > Edit"	Operational sequences, for example, menu commands, shortcut menu commands.
<F1>, <Alt+P>	Keyboard operation

Please observe notes labeled as follows:

Note

A note contains important information about the product described in the manual and its use, or a specific section of the manual to which you should pay particular attention.

Naming conventions

Term	Applies to
System	<ul style="list-style-type: none">• System• Machining center• One or more machines
HMI device Device	<ul style="list-style-type: none">• TP700 Comfort Outdoor• TP1500 Comfort Outdoor
WinCC	WinCC V13 SP1 (TIA Portal)

Figures

This document contains figures of the devices described. The figures can deviate from the particularities of the delivered device.

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Overview

1.1 Product description

SIMATIC Comfort Outdoor devices with glass touch screen and powder-coated, UV-resistant aluminum front are designed for use in indoor and outdoor areas, for example, in the fields of Oil&Gas, Marine or Refrigeration Technology.

All devices offer the same excellent functionality and are configured exclusively with the innovative HMI software, WinCC. The engineering software is integrated in the engineering framework, "Totally Integrated Automation Portal".



Features

Front	<ul style="list-style-type: none"> • External dimensions of the front and mounting cutout correspond to the standard product • Durable powder coating • High UV resistance • GFG (Glass-Film-Glass) touch screens, analog resistive • Manual or automatic brightness control with brightness sensor
Display	<ul style="list-style-type: none"> • High-resolution TFT display in widescreen format with 16 million colors • Suitable for use in daylight • Anti-reflective and bonded for glare-free reading
Touch screen	<ul style="list-style-type: none"> • Resistive single touch screen • Suitable for operation with gloves, pen and fingers
Interfaces	<ul style="list-style-type: none"> • 2 PROFINET interfaces • 1 PROFIBUS interface • USB 2.0 ports: <ul style="list-style-type: none"> – 2 x USB host interface (type A) – 1 x USB device interface (type mini B)

Mechanical differences to the standard product




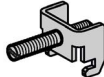
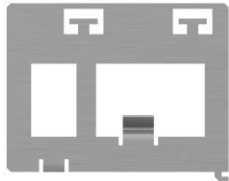
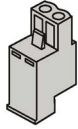
Device depth	<p>The Comfort Outdoor devices are deeper than the corresponding Comfort HMI device.</p> <p>Read the information in the following sections:</p> <ul style="list-style-type: none"> • Preparing the mounting cutout (Page 17) • Dimension drawings (Page 29)
Slots for SD memory cards	<p>The protection mechanism of the SD memory card for the Comfort Outdoor devices is mechanically differently than that of the corresponding Comfort HMI device. The safety tab is not required with the Comfort Outdoor devices.</p>

1.2 Software requirements

You require the software WinCC V13 SP1 (TIA Portal) Update 6 with the Hardware Support Package "HSP0149 HMI TP700_1500 Comfort Outdoor" or later versions. You can find the software under Technical Support on the Internet.

1.3 Scope of delivery

The following components are included in the scope of delivery of the HMI device.

Name	Figure	Quantity		
HMI device		1		
Installation instructions (Quick Install Guide)		1		
Mounting clips		Aluminum mounting clip	8	TP700 Comfort Outdoor
		Steel mounting clip	12	TP1500 Comfort Outdoor
Strain relief	Example: Strain relief 	1		TP700 Comfort Outdoor
Power supply terminal	Connector, female, 2-pin, type 1 	1		

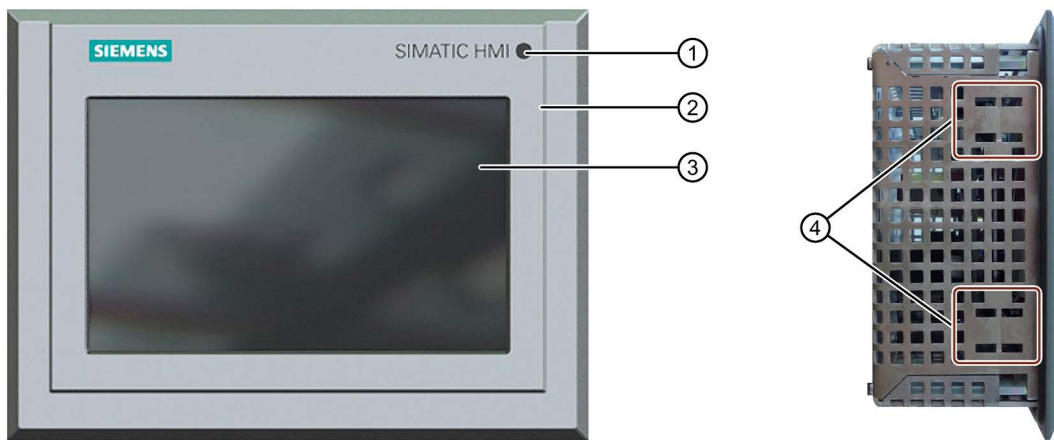
Some components in the scope of delivery are also available as accessories, see "Accessories" section in the Comfort Panels operating instructions or directly in the Industry Mall (<https://mall.industry.siemens.com>).

1.4 Configuration of the devices

1.4.1 Device views

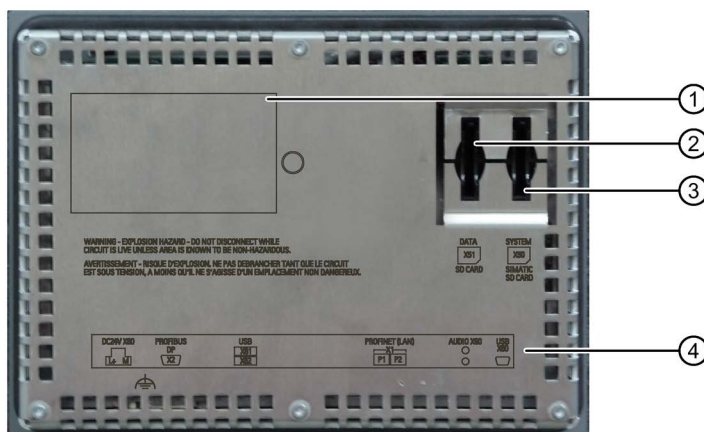
This section describes the basic design of the device using the example of the TP700 Comfort Outdoor.

Front view and side view



- ① Light sensor
- ② Aluminum front, powder coated
- ③ Glass touch screen / display
- ④ Cutouts for attaching the mounting clamps

Rear view

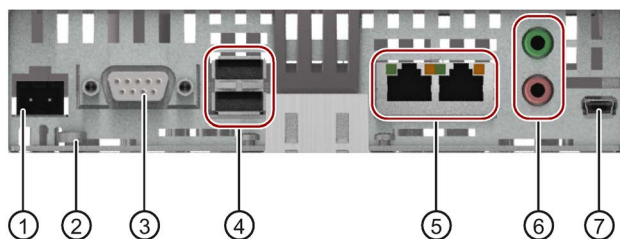


- ① Rating plate
- ② Slot for data memory card
- ③ Slot for system memory card
- ④ Interface inscription

1.4.2 Interfaces

Position of the interfaces

The figure below shows the interfaces of the HMI devices.



- | | |
|---|--------------------------------|
| ① X80 power supply connector | ⑤ X1 PROFINET (LAN), 10/100 Mb |
| ② Connection for equipotential bonding (ground) | ⑥ X90 Audio Line IN / OUT |
| ③ X2 PROFIBUS (Sub-D RS422/485) | ⑦ X60 USB type Mini B |
| ④ X61 / X62 USB type A | |

Additional information

Use the X1 or X60 interface to connect a configuration PC. Use the X61 / X62 interfaces to connect peripheral devices such as a printer or keyboard. Use the X90 interface to connect a loudspeaker.

You can fasten the USB and PROFINET connecting cables to the rear panel of the HMI device with cable ties.

Secure the cables with a separate strain relief for the TP700 Comfort Outdoor. Install the strain relief on the HMI device.

Safety instructions

2.1 General safety instructions

The general safety instructions in the "Comfort Panel" operating instructions apply.

Also note the following for Comfort outdoor devices:

 **WARNING**

Unintended functions may be triggered with icing

If the operating temperature is below 2 °C, icing may occur on the front of the device. Icing may trigger unintended functions in some circumstances.

To avoid triggering unintended functions, you can take the following measures, for example:

- Install an additional enabling switch in your plant for operator actions that initiate a dangerous operating state.
- Assign a password to operator actions or inputs that initiate a dangerous operating state.

2.2 Notes about usage

Industrial applications

The HMI device is designed for outdoor areas in industrial applications. It conforms to the following standards:

- Requirements of the emission standard for industrial environments, EN 61000-6-4: 2007 + A1:2011
- ESD immunity requirements to DIN EN 61000-6-2:2005

Use in residential areas

Note

The HMI device is not intended for use in residential areas. Operation of an HMI device in residential areas can have a negative influence on radio/TV reception.

If the HMI device is used in a residential area, you must take measures to achieve Limit Class B conforming to EN 55011 for RF interference.

Individual acceptance is required.

Use with additional measures

The HMI device should not be used at the following locations unless additional measures are taken:

- In locations with a high degree of ionizing radiation
- In locations with severe operating conditions, for example, due to:
 - Corrosive vapors, gases, oils or chemicals
 - Electrical or magnetic fields of high intensity
- In systems that require special monitoring, for example, in:
 - Elevators
 - Systems in especially hazardous rooms

Mounting and connecting the HMI device

3.1 Preparing for installation

3.1.1 Checking the package contents

Check the package content for visible signs of transport damage and for completeness.

Note**Damaged parts**

A damaged part will cause the HMI device to malfunction.

Do not install parts damaged during shipment. In the case of damaged parts, contact your Siemens representative.

Check the scope of supply of the HMI device (see Scope of delivery (Page 9)).

Additional documents may be included in the delivery.

The documentation is part of the HMI device and is required for subsequent commissioning. Keep all enclosed documentation for the entire service life of the HMI device. You must pass along the enclosed documentation to any subsequent owner or user of the HMI device. Make sure that every supplement to the documentation that you receive is stored together with the operating instructions.

3.1.2 Checking the operating conditions

Note the following aspects before installing the HMI device:

1. Familiarize yourself with the technical specifications for operating the HMI device. You can find this information in the section "Technical information (Page 25)".
2. Read the information about local use of the HMI device, see section "Notes about usage (Page 13)".

3.1.3 Selecting a mounting position

The device is suitable for installation in:

- Mounting cabinets
- Control cabinets
- Switchboards
- Consoles

In the following, all of these mounting options are referred to by the general term "cabinet".

The device is self-ventilated and approved for inclined mounting at angles up to $\pm 35^\circ$ from the vertical in stationary cabinets.

NOTICE

Damage due to overheating

Inclined installation reduces the convection by the device and therefore the maximum permitted ambient temperature for operation.

If there is sufficient forced ventilation, the device can also be operated in the inclined mounting position up to the maximum permitted ambient temperature for vertical installation. The device may otherwise be damaged and its certifications and warranty will be rendered null and void.

The ambient temperature ranges listed in this section apply to the temperature inside the cabinet.

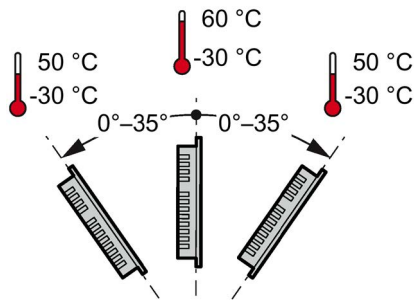
Mounting position

Select one of the approved mounting positions for your device. The approved mounting positions are described in the following sections.

Mounting in horizontal format

Ambient temperature when mounted in horizontal format:

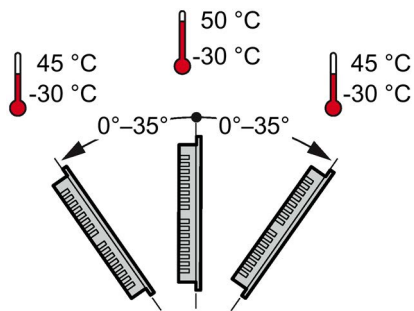
- Vertical mounting (0° inclined): Maximum +60 °C
- Inclined mounting (inclined up to 35°): Maximum +50 °C



Mounting in vertical format

Ambient temperature when mounted in vertical format:

- Vertical mounting (0° inclined): Maximum +50 °C
- Inclined mounting (inclined up to 35°): Maximum +45 °C



See also

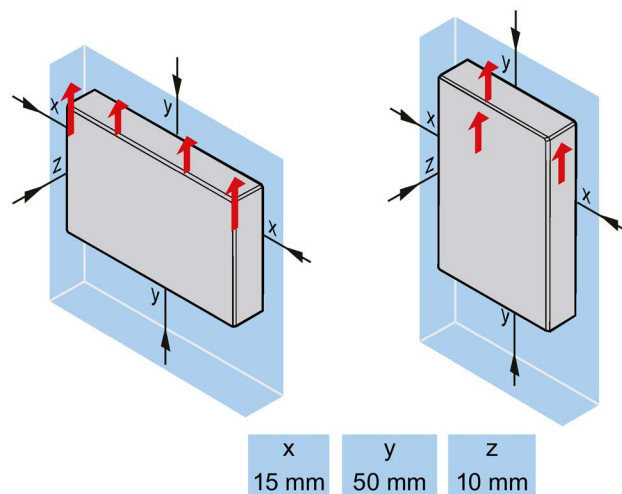
Operating Conditions (Page 27)

3.1.4 Checking clearances

The following clearances are required around the HMI device to ensure sufficient self-ventilation:

- At least 15 mm to both the right and left of the mounting cutout (in x direction) to allow for insertion of the mounting clips during installation
- At least 50 mm above and 50 mm below the mounting cutout (in the y direction) for ventilation
- At least 10 mm behind the rear panel of the HMI device (in the z direction)

The following figure shows the clearances during mounting of the HMI devices in horizontal and vertical formats:



Note

Ensure that the maximum ambient temperature is not exceeded when mounting the device in a cabinet and especially in a closed enclosure.

3.1.5 Preparing the mounting cutout

Note

Stability of the mounting cutout

The material in the area of the mounting cutout must provide sufficient strength to guarantee lasting and safe mounting of the HMI device.

To achieve the degrees of protection described below, it must be ensured that deformation of the material cannot occur due to the force of the mounting clips or operation of the device.

3.1 Preparing for installation

Degrees of protection

The degrees of protection of the HMI device can only be guaranteed if the following requirements are met:

- Material thickness at the mounting cutout for a protection rating of IP66 or Front face only Type 4X/Type 12 (Indoor/Outdoor): 2 mm to 6 mm
- Permitted deviation from plane at the mounting cutout: ≤ 0.5 mm
This condition must be met for the mounted HMI device.
- Permitted surface roughness in the area of the mounting seal: $\leq 120 \mu\text{m}$ ($R_z 120$)

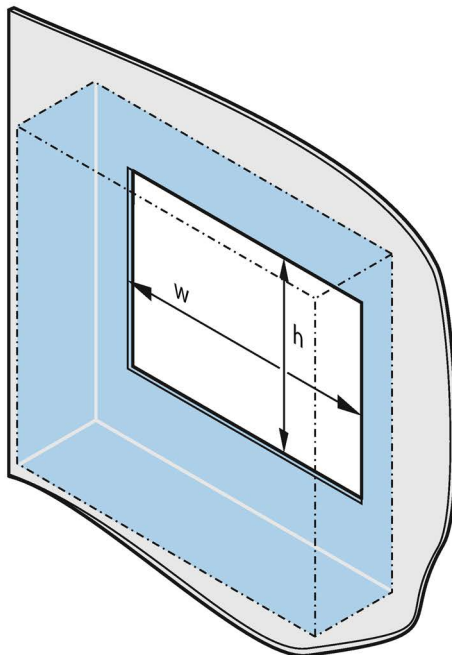
Compatibility of the mounting cutout to other HMI devices

The mounting cutouts of the following HMI devices are compatible with the mounting cutouts of the following predecessor devices:

HMI device	Mounting cutout compatible with
TP700 Comfort Outdoor	TP700 Comfort, TP 177B 6", MP 177 6", TP 277 6"
TP1500 Comfort Outdoor	TP1500 Comfort

Please note that although the dimensions for the mounting cutout are the same, the device depth and/or the enclosure front dimensions may differ from the respective dimensions of the predecessor devices.

Dimensions of the mounting cutout



	w_0^{+1}	h_0^{+1}
TP700 Comfort Outdoor	197	141
TP1500 Comfort Outdoor	396	291

Width and height should be reversed accordingly when mounting in vertical format.

Mounting depth

The mounting depth of the devices is:

HMI device	Mounting depth
TP700 Comfort Outdoor	67 mm
TP1500 Comfort Outdoor	77 mm


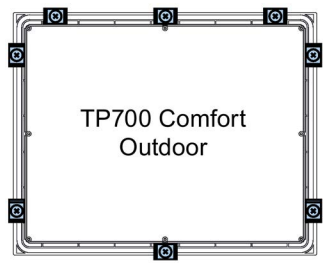
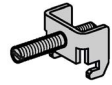

3.2 Mounting the device

Positions of the mounting clips

To achieve the degree of protection for the HMI device, the positions for the mounting clips shown below must be adhered to.

The positions of the mounting clips are marked by stamps on the cutouts. Fit the mounting clips in all the stamped cutouts.

The following table shows the type, number, and position of the mounting clips needed for the respective HMI devices.

HMI device	Mounting clips		
	Type	Number	Position on the HMI device
TP700 Comfort Outdoor	Aluminum mounting clip 	8	 TP700 Comfort Outdoor
TP1500 Comfort Outdoor	Steel mounting clip 	12	 TP1500 Comfort Outdoor

Requirement

- All packaging components and protective films were removed from the HMI device.
- To install the HMI device, you need the mounting clips from the accessories kit.
- The mounting seal must be installed on the HMI device.

Procedure

Note

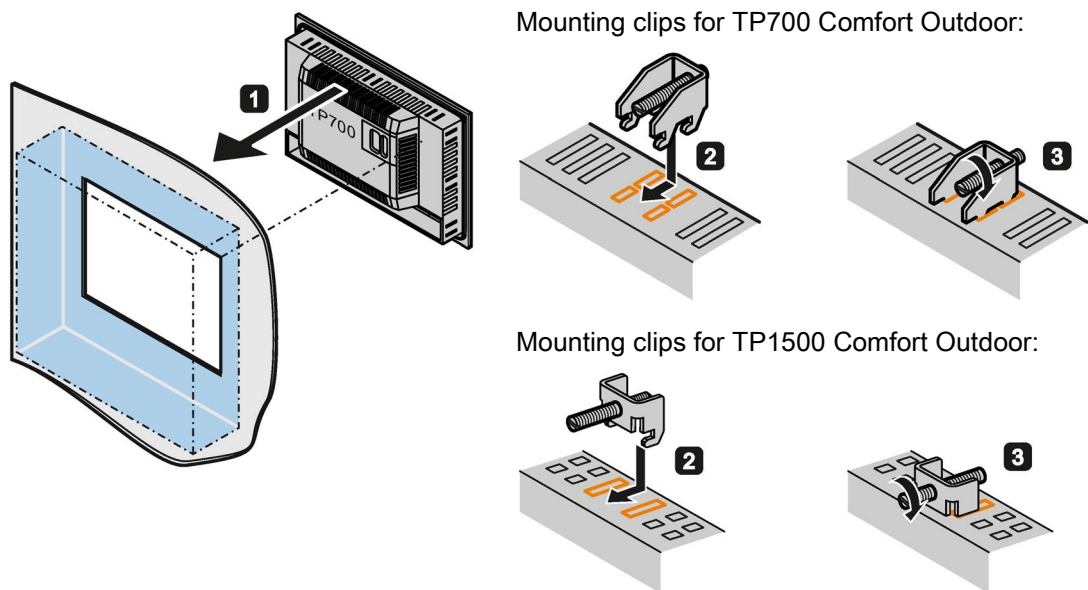
Risk of guaranteed degree of protection not being met

If the mounting seal is damaged, the degree of protection is not guaranteed. Replace the device in this case.

Note

Installation of the HMI device

Always mount the HMI device according to the instructions in this manual.



Proceed as follows:

1. Insert the HMI device into the mounting cutout from the front.
2. Insert the mounting clamp into the cutout provided on the HMI device.
3. Tighten the mounting clamp with the setscrew.

Note

Adhere to the permitted torque when tightening the setscrew of the mounting clamp:
0.5 Nm

4. Repeat steps 2 and 3 for all mounting clips.
5. Check the fit of the device in the mounting cutout.

3.3 Connecting the device

The specifications in "Comfort Panels" operating instructions apply.

The X3 interface "PROFINET (LAN) 10/100/1000 Mbit" is not featured on the TP700 Comfort Outdoor and TP1500 Comfort Outdoor devices.

Configuring the device

4.1 Overview

The specifications in the "Comfort Panel" operating instructions apply for commissioning and parameter assignments.

The enhanced brightness control of the Comfort Panels Outdoor differs from the other Comfort HMI devices and is described in the following section.

4.2 Changing the brightness settings

The Comfort Outdoor Panels feature a manual or automatic brightness control with a brightness sensor. Make the appropriate settings in the Control Panel.

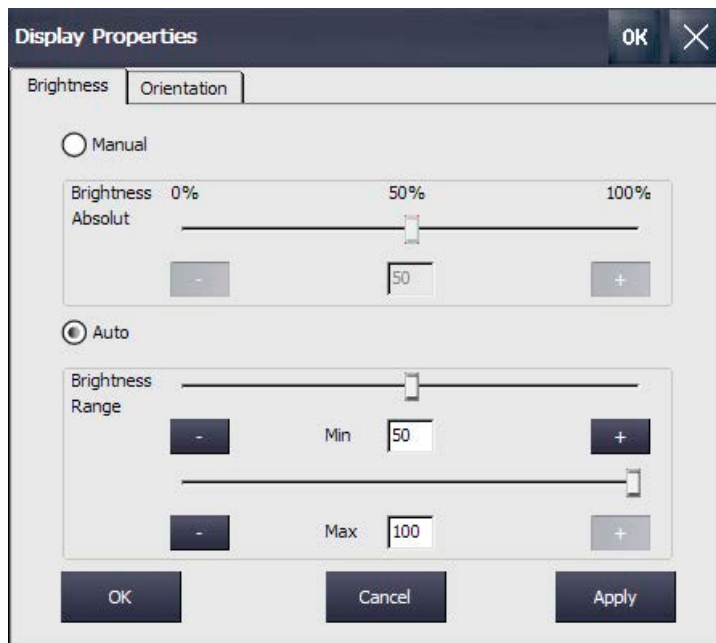
Requirement

The Control Panel is open.

Set brightness

Proceed as follows:

1. Open the "Display Properties" dialog with the Display icon.
2. Switch to the "Brightness" tab. The figure below shows the factory settings.



Select the "Manual" or "Auto" option.

- In the "Manual" mode, you can adjust the brightness to the desired value using the slider.

Note

"Manual" mode

A change in the brightness value through the configuration takes precedence over the manual setting.

- in the "Auto" mode, you can set the minimum and maximum brightness for the automatic brightness control of the HMI device under "Brightness Range".

NOTICE
"Auto" mode (factory state)
The brightness parameters are controlled by the light sensor in "Auto" mode. The brightness can no longer be changed manually or through the configuration.
The "Screen saver" function is available as usual.

3. If you want to check the settings without closing the dialog, press the "Apply" button.
4. To discard the settings and close the dialog, press the "Cancel" button. To save the settings and close the dialog, press the "OK" button.

Commissioning a project

5.1 Overview

The specifications in "Comfort Panels" operating instructions apply.

5.2 Using existing projects

Proceed as follows to transfer an existing project to the HMI device:

1. Open the existing project in WinCC (TIA Portal).
2. Make sure that the project is dimensioned within the functional scope of the HMI device, see section "Scope of functions with WinCC (Page 33)".

Note

The functional scope of the TP1500 Comfort Outdoor corresponds to the functional scope of a TP1200 Comfort.

3. Replace the HMI device in WinCC.
4. Transfer the project to the HMI device as described in the "Comfort Panel" operating instructions.

Note

"Backup, Restore" and "Automatic Backup" only for devices with identical article numbers

The "Backup" and "Restore" function using a data memory card and the "Automatic Backup" function using the system memory card are only available for devices with identical article numbers.

Maintenance and care

6.1 Cleaning the device

The specifications in "Comfort Panels" operating instructions apply.

NOTICE
Disable or switch off the device while cleaning
Switch off the HMI device or activate the clean screen when you clean the appliance during operation.

Note**Cleaning of the coated glass touch screen**

Take care not to damage the glass touch screen and the coating of the touch screen on Comfort Outdoor devices.

Use a cleaning cloth and dishwashing liquid or foaming screen cleaners. Apply as little pressure as possible on the touch screen when cleaning.

6.2 Repair, spare parts, recycling and disposal

The specifications in "Comfort Panels" operating instructions apply.

Technical information

7.1 Certificates and approvals

Approvals

The device is certified as shown on the rear of the device.

As soon as additional certificates are available, you can find them in the Industry Mall or Technical Support.

Search for your device and use the link "Support > Approvals / Certificates".

7.2 Electromagnetic compatibility

The device is designed for industrial use.

7.2.1 Emitted interference

The device meets the requirements according to EN 61000-6-4. The device corresponds to limit class A.

Note

The HMI device is not intended for use in residential areas. Operation of an HMI device in residential areas can have a negative influence on radio/TV reception.

7.2.2 Immunity to interferences

The device meets the requirements according to EN 61000-6-2.

7.3 Mechanical ambient conditions

7.3.1 Storage conditions

The following information is for a device that is transported and stored in its original packaging.

The device meets the requirements according to IEC 60721-3-2 Class 2M2 with the following amendments and limitations:

Type of condition	Permitted range
Free fall	≤ 1 m
Vibration to IEC 60068-2-6	5 .. 8.4 Hz, deflection 3.5 mm 8.4 ... 500 Hz, acceleration 1 g
Shock to IEC 60068-2-27	250 m/s ² , 6 ms, 1000 shocks

7.3.2 Operating Conditions

The following information applies to a device installed according to the specifications in these operating instructions.

The device meets the requirements according to IEC 60721 Class 3M3 with the following amendments and limitations:

Type of condition	Permitted range
Vibration to IEC 60068-2-6	5 ... 8.4 Hz, deflection 3.5 mm 8.4 ... 200 Hz, acceleration 1 g
Shock to IEC 60068-2-27	150 m/s ² , 11 ms, 3 shocks

7.4 Climatic ambient conditions

7.4.1 Long-term storage

The following information applies to a device that is stored in its original packaging for longer than two weeks.

The device meets the requirements of IEC 60721-3-1 Class 1K2.

7.4.2 Transport and short-term storage

The following information applies to a device that is transported in the original packaging and weather-proof packaging, and stored from some time.

The device meets the requirements according to IEC 60721-3-2 Class 2K4 with the following amendments and limitations:

Type of condition	Permitted range
Temperature	-30 ... 70 °C
Atmospheric pressure	1080 ... 660 hPa, corresponds to an elevation of -1000 to 3500 m
Relative humidity	10 ... 90 %
Pollutant concentration	SO ₂ : < 0.5 ppm; relative humidity < 60 %, no condensation H ₂ S: < 0.1 ppm; relative humidity < 60 %, no condensation

Note

If dewing has developed, wait approximately 4 hours until the HMI device has dried completely before switching it on.

Do not expose the HMI device to direct radiation from a heater.

7.4.3 Operating Conditions

The following information applies to a device installed according to the specifications in these compact operating instructions.

The HMI device is designed for stationary operation according to IEC 60721.

The device meets the requirements according to IEC 60721-3-3 Class 3K3 with the following amendments and limitations:

Type of condition	Permitted range		
	Mounting position	Elevation -1000 ... 2000 m	Elevation 3000 m *
Temperature, Mounting in horizontal format	Vertical	-30 ... 60 °C	-30 ... 54 °C
	Inclined, maximum inclination 35°	-30 ... 50 °C	-30 ... 45 °C
Temperature, Mounting in vertical format	Vertical	-30 ... 50 °C	-30 ... 45 °C
	Inclined, maximum inclination 35°	-30 ... 45 °C	-30 ... 40 °C
Atmospheric pressure, operation elevation	1080 ... 795 hPa, corresponds to an elevation of -1000 to 2000 m 795 ... 701 hPa, corresponds to an elevation of 2000 ... 3000 m		
Relative humidity	From 10 to 90%, without condensation		
Pollutant concentration	SO ₂ : < 0.5 ppm; relative humidity < 60 %, no condensation H ₂ S: < 0.1 ppm; relative humidity < 60 %, no condensation		

* Interpolation of the maximum temperature value is permitted in the range of 2000 ... 3000 m.

Note

The system components connected to the HMI device, the power supply for example, must also be suited to the respective operating conditions.

7.5 Protection classes

7.5.1 Insulation test

The device meets the requirements according to EN 61131-2.

Circuits with a nominal voltage of U_n to other circuits or ground	Test voltage
Isolation tested with (Type Test)	707 V DC

7.5.2 Protection against foreign objects and water

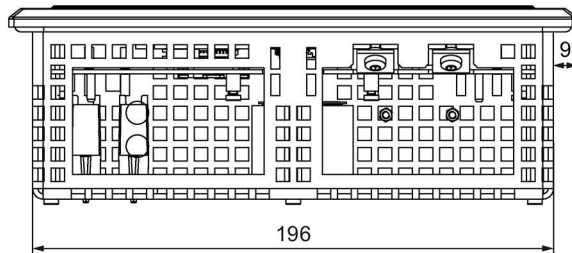
The device meets the requirements according to EN 60529.

Device side	Degree of protection
Front	When mounted: <ul style="list-style-type: none">• IP66• Type 4X/Type 12 (Indoor/Outdoor)
Rear panel	<ul style="list-style-type: none">• IP20 protection against contact with standard test probes. There is no protection against ingress by water.

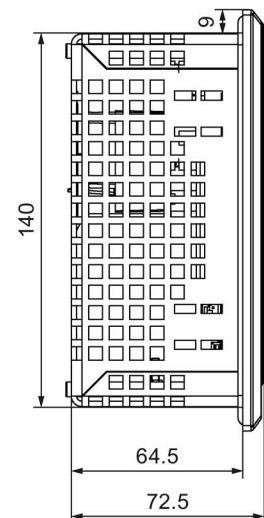
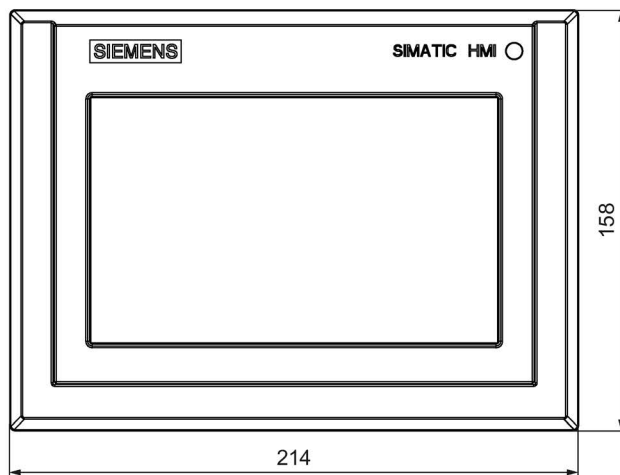
The degree of protection of the device front can only be guaranteed if the mounting seal lies flush against the mounting cutout. Read the corresponding information in section "Preparing the mounting cutout (Page 17)".

7.6 Dimension drawings

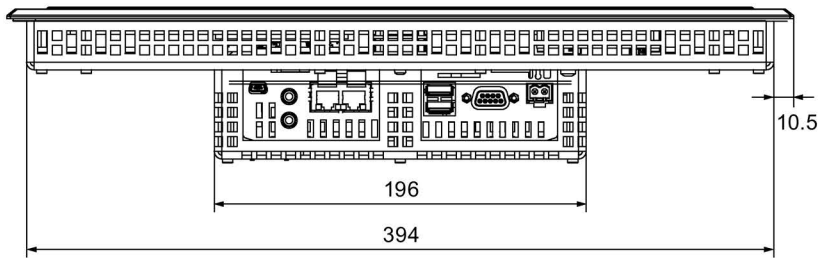
7.6.1 Dimension drawings of the TP700 Comfort Outdoor



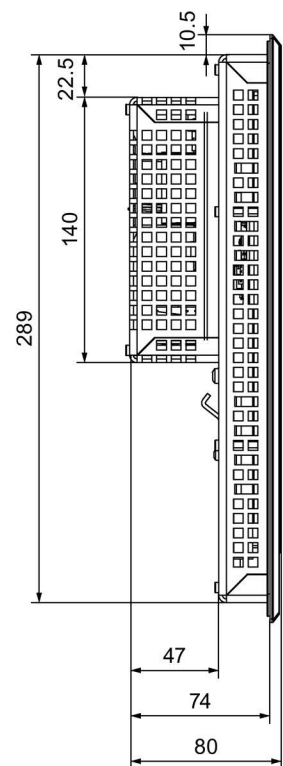
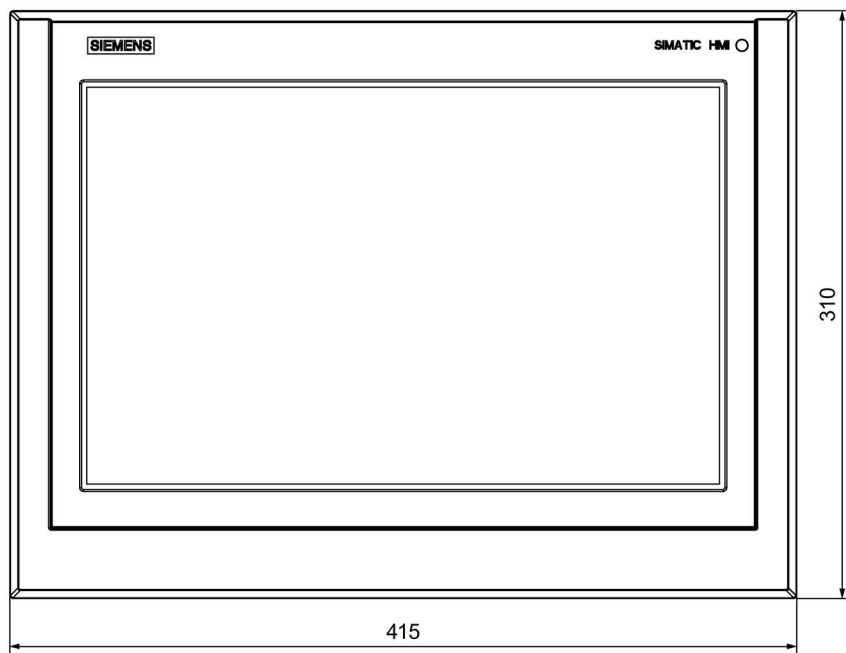
All dimensions in mm.



7.6.2 Dimension drawings of the TP1500 Comfort Outdoor



All dimensions in mm.



7.7 Specifications

Weight

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Weight without packaging	approx. 1.5 kg	4.0 kg

Display

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Type	LCD TFT	
Active display area	7.0" 152 mm x 91 mm	15.4" 331 x 207 mm
Resolution	800 x 480 pixels	1280 x 800 pixels
Possible colors	Up to 16 million	
Brightness control	Manual/automatic, value range 0 to 100 ¹ , 0 = backlighting off	
Backlighting	LED	
Half Brightness Life Time (MTBF ²)	50000 h	
Pixel error class in accordance with ISO 9241-307	I	

¹ Via WinCC: Complete range, via Control Panel: Manual ("Low limit" to 100) or automatic (0 to 100). The factory setting for "Low limit" is a fixed minimum value.

² MTBF: Operating hours after which the maximum brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-controlled via screen saver or centrally via PROFInergy.

Input device

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Touch screen (analog resistive)	Yes, GFG (glass film glass) touch	

Memory

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Usable memory for application data	12 MB	
Usable memory for recipe data ¹	2 MB	
Additional memory for options	12 MB	
Data memory card ²	1 x MMC/SD combination slot	
System memory card ²	1 x SD slot	

¹ Can be extended via memory card

² Memory cards are available as SIMATIC HMI accessories

7.8 Description of the ports

Interfaces

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
1 x RS 422/485 (PROFIBUS)	Max. 12 Mbps, applies to DP operations	
Ethernet (PROFINET)	2 x RJ45 10/100 Mbps ¹	
Audio	Line In and Line Out	
USB 2.0	2 x Host ² 1 x Device ³	

¹ With integrated switch (one IP address only)

² USB type A; maximum load 500 mA

³ USB type mini B (5-pin)

Power supply

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Rated voltage	24 V DC	
Permitted voltage range	+19.2 V to +28.8 V	
Rated current range, depends on the load	0.5 ... 1.0 A	0.8 ... 1.4 A
Inrush current I _{2t}	0.5 A ² s	
Power	17 W	32 W
Maximum permitted transient	35 V (500 ms)	
Minimum time between two transients	50 s	
Internal protection	Electronic	

Miscellaneous

	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
Buffered real-time clock ¹	Yes	
Audio reproduction	Integrated or external via Line OUT	
Magnetic field intensity	50/60 Hz; 100 A/m RMS	

¹ Battery backup typically 6 weeks

7.8 Description of the ports

The specifications in "Comfort Panels" operating instructions apply.

The X3 interface "PROFINET (LAN) 10/100/1000 Mbit" is not featured on the TP700 Comfort Outdoor and TP1500 Comfort Outdoor devices.

7.9 Scope of functions with WinCC

The tables below show the objects which can be integrated in a project for an HMI device.

Note

The specified values are maximum values of the individual objects. Simultaneous use of multiple objects with their maximum value can lead to problems in the active project.

Alarms

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Alarms	Number of discrete alarms	4000
	Number of analog alarms	200
	Alarm length	80 characters
	Number of tags / process values in an alarm	Max. 8
	Number of alarm classes	32
	Display	Alarm window, alarm view
	Acknowledge error alarm individually	Yes
	Edit alarm	Yes
	Alarm indicator	Yes
ALARM_S	Display S7 alarms	Yes
Alarm buffer, retentive	Alarm buffer capacity	1024
	Simultaneously queued alarm events	500
	View alarm	Yes
	Delete alarm buffer	Yes
	Print alarms line by line	Yes

Tags, values and lists

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Tags	Number	2048
Limit value monitoring	Input/output	Yes
Linear scaling	Input/output	Yes
Text lists	Number	500 ¹
Graphics lists	Number	500 ¹

¹ The maximum total of text and graphics lists is 500.

Screens

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Screens	Number	500
	Objects per screen	400
	Tags per screen	400
	Complex objects per screen (for example, bars)	20
	Template	Yes

Recipes

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Recipes	Number	300
	Data records per recipe	500
	Entries per data record	1000
	Recipe memory	256 KB
	Storage location ¹	<ul style="list-style-type: none"> • Memory card (MMC/SD) • USB storage medium • Network drive

¹ The number of recipe data records may be restricted by the capacity of the storage medium.

Logs

Note

The HMI devices are suitable for the logging of relatively small volumes of data.

Manage the data in several adjacent logs in a segmented circular log. The use of a large circular log has a negative effect on performance.

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Logs	Number of logs	50
	Number of partial logs in a segmented circular log	400
	Entries per log ¹	20000
	Filing format	CSV with ANSI character set, RDB, TXT
	Storage location	<ul style="list-style-type: none"> • Memory card • USB storage medium • Network drive

¹ The number of entries in the log may be restricted by the capacity of the storage medium.

Note

Data consistency

If the HMI device is switched off, the consistency of the stored data is only ensured with "SIMATIC HMI Memory Card" type memory cards.

With commercially available memory cards, switching off the device may result in the loss of saved data, for example, due to a power failure.

The consistency of data stored in logs is only guaranteed if you use RDB format.

Only use "SIMATIC HMI Memory Card 2 GB" (SD) or higher.

Safety

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
User view	Number of user groups	50
	Number of users	50
	Number of authorizations / user permissions	32

Info texts

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Info texts	Length (no. of characters)	320 (depending on font)
	For alarms	Yes
	For screens	Yes
	For screen objects (e.g. I/O field, switch, button, invisible button)	Yes

Additional functions

Object	Specification	TP700 Comfort Outdoor, TP1500 Comfort Outdoor
Screen settings	Touch screen calibration	Yes
	Brightness setting	Yes
Language change	Number of languages per project	32
VB Script	User-specific extension of the functionality	Yes
	Number of scripts	100
Graphic objects	Vector and pixel graphics	Yes
Trends	Number	300
Task planner	Number of tasks	48
Text objects	Number	40000
Direct keys	PROFIBUS DP direct keys	Yes
	PROFINET IO direct keys	Yes

Technical Support

A.1 Service and support

You can find additional information and support for the products described on the Internet at the following addresses:

- Technical support (http://www.siemens.de/automation/csi_en_WW)
- Support request form (<http://www.siemens.com/automation/support-request>)
- After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)
- SIMATIC Documentation Collection (<http://www.siemens.com/simatic-tech-doku-portal>)
- Your local representative
(<http://www.automation.siemens.com/mcms/aspa-db/en/Pages/default.aspx>)
- Training center (<http://sitrain.automation.siemens.com/sitrainworld/?AppLang=en>)
- Industry Mall (<https://mall.industry.siemens.com>)

When contacting your local representative or Technical Support, please have the following information at hand:

- MLFB of the device
- BIOS version for industrial PC or image version of the device
- Other installed hardware
- Other installed software

Tools & downloads

Please check regularly if updates and hotfixes are available for download to your device. The download area is available on the Internet at the following link:

After Sales Information System SIMATIC IPC/PG (<http://www.siemens.com/asis>)

A.2 Troubleshooting and system alarms

The specifications in "Comfort Panels" operating instructions apply.

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